

IN THE CLAIMS

Claim 1. (Currently Amended) A method of addressing a protocol data unit to a network construct on a communication network, the method comprising the steps of:

generating a capability addressed protocol data unit that contains, as an address, at least one capability of the network construct, the capability addressed protocol data unit being addressed to all constructs on the communication network having the at least one capability, the capability addressed protocol data unit specifying at least one of a set of possible capabilities to enable the capability addressed protocol data unit to be selectively received by only those network constructs with the selected capability; and

issuing the protocol data unit onto the communication network.

Claim 2. (Original) The method of claim 1, wherein the address is a destination address.

Claim 3. (Original) The method of claim 2, wherein the destination address is a destination Media Access Control (MAC) address.

Claim 4. (Original) The method of claim 1, wherein the network construct is a provider edge network element, and wherein the capability is specific to provider edge network elements.

Claim 5. (Original) The method of claim 1, wherein the network construct is a port of a particular type on a network element, and wherein the capability is specific to that type of port.

Claim 6. (Original) The method of claim 1, further comprising listening for a reply to the protocol data unit from the communication network.

Claim 7. (Original) The method of claim 6, wherein receipt of a reply indicates the presence of the network construct on the communication network.

Claim 8. (Currently Amended) A method of receiving a protocol data unit by a network construct on a communication network, the method comprising:

filtering protocol data units to identify capability addressed protocol data units that contain, as an address, at least one capability, the capability addressed protocol data unit being addressed to all constructs on the communication network having the at least one capability, the capability addressed protocol data unit specifying at least one of a set of possible capabilities to enable the capability addressed protocol data unit to be selectively received by only those network constructs with the selected capability; and

receiving the identified capability addressed protocol data units that match at least one capability of the network construct.

Claim 9. (Canceled)

Claim 10. (Original) The method of claim 8, wherein the address is a destination address.

Claim 11. (Original) The method of claim 8, wherein the protocol data unit contains a source Media Access Control (MAC) address and a destination MAC address, and wherein the address is at least one of the source MAC address and the destination MAC address.

Claim 12. (Currently Amended) ~~The method of claim 11,~~ A method of receiving a protocol data unit by a network construct on a communication network, the method comprising:

filtering protocol data units to identify protocol data units that contain, as an address, at least one capability; and

receiving identified protocol data units;

wherein the protocol data unit contains a source Media Access Control (MAC) address and a destination MAC address, and wherein the address is at least one of the source MAC address and the destination MAC address; and

wherein the destination MAC address comprises:

a first field containing an Organizationally Unique Identifier (OUI) that identifies the protocol data unit to the network construct as containing a capability based address; and

a second field identifying the capability of the network construct to which the protocol data unit is addressed.

Claim 13. (Currently Amended) The method of claim 8, ~~wherein the at least one capability matches a capability of the network construct, and~~ the method further comprising the step of responding to the protocol data unit.

Claim 14. (Original) The method of claim 13, wherein the step of responding comprises generating a response protocol data unit and sending the response protocol data on the communication network.

Claim 15. (Currently Amended) A method of discovering the presence of a network construct with a first capability on a communication network, the method comprising the steps of:

flooding a capability addressed protocol data unit ~~addressed to the first capability~~ on the communication network, the capability addressed protocol data unit being addressed to all constructs on the communication network having the at least one capability, the capability addressed protocol data unit specifying at least one of a set of possible capabilities to enable the capability addressed protocol data unit to be selectively received by only those network constructs with the selected capability; and

listening for a response to the capability addressed protocol data unit.

Claim 16. (Original) The method of claim 15, wherein the protocol data unit is an Operation Administration and Maintenance (OAM) packet in an OAM flow.

Claim 17. (Original) The method of claim 15, wherein the protocol data unit is a hello message.

Claim 18. (Original) The method of claim 15, wherein the step of flooding comprises at least one of broadcasting and multicasting to cause the protocol data unit to be forwarded throughout a domain on the communication network.

Claim 19. (Currently Amended) A network construct element, comprising:

control logic configured to enable the network construct element to receive capability addressed protocol data units, each capability addressed protocol data unit being addressed to all constructs on the communication network having the at least one capability, each capability

addressed protocol data unit specifying at least one of a set of possible capabilities to enable the capability addressed protocol data unit to be selectively received by only those network constructs with the selected capability, and wherein the control logic is further configured to select capability addressed protocol data units for processing which have a capability indication that matches a capability of the network element.

Claim 20. (Currently Amended) The network construct element of claim 19, wherein the control logic is further configured to enable the network construct element to respond to capability addressed protocol data units.